PHENIX

TECHNICAL SUPPORT 2012

PHENIX WEEKLY PLANNING

3/22/2012

Don Lynch

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This Week

- **Maintenance access Tuesday to close VTX/FVTX**
  - FVTX removed wedges, moved the detectors in
  - PC fuse fixed
  - PBSz moved bad channels
  - RICH Mainframe fixed
  - GMH sensors recalibrated,
- 500 GeV run continues
- Next scheduled maintenance: 3/28?
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- SB tour tomorrow

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Next Week

- 500 GeV run continues
- Tuesday MEXT tour
- Wednesday 3/28, next scheduled maintenance access
  - Plans?
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- DOE HSS Hazard Identification "Extent of Condition" Review
  - Work planning, hazard identification processes operating procedures, etc.
- Other Business

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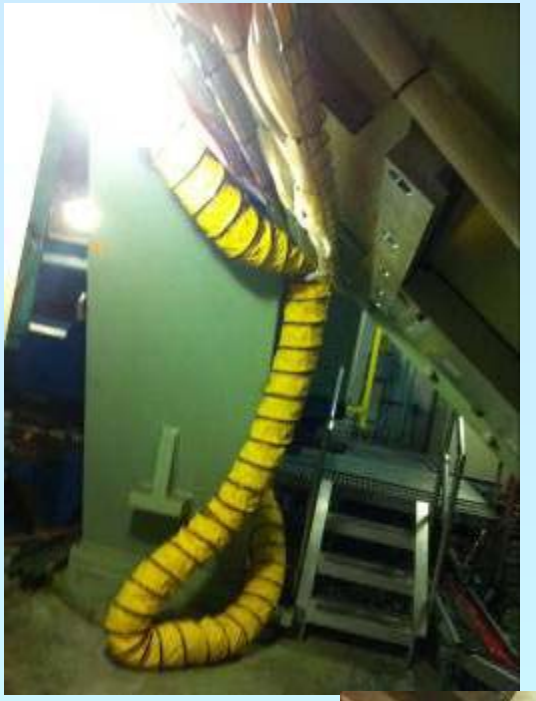
RPC1 Cooling

South



North

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MPC Electronics Rack Upgrade, North Side

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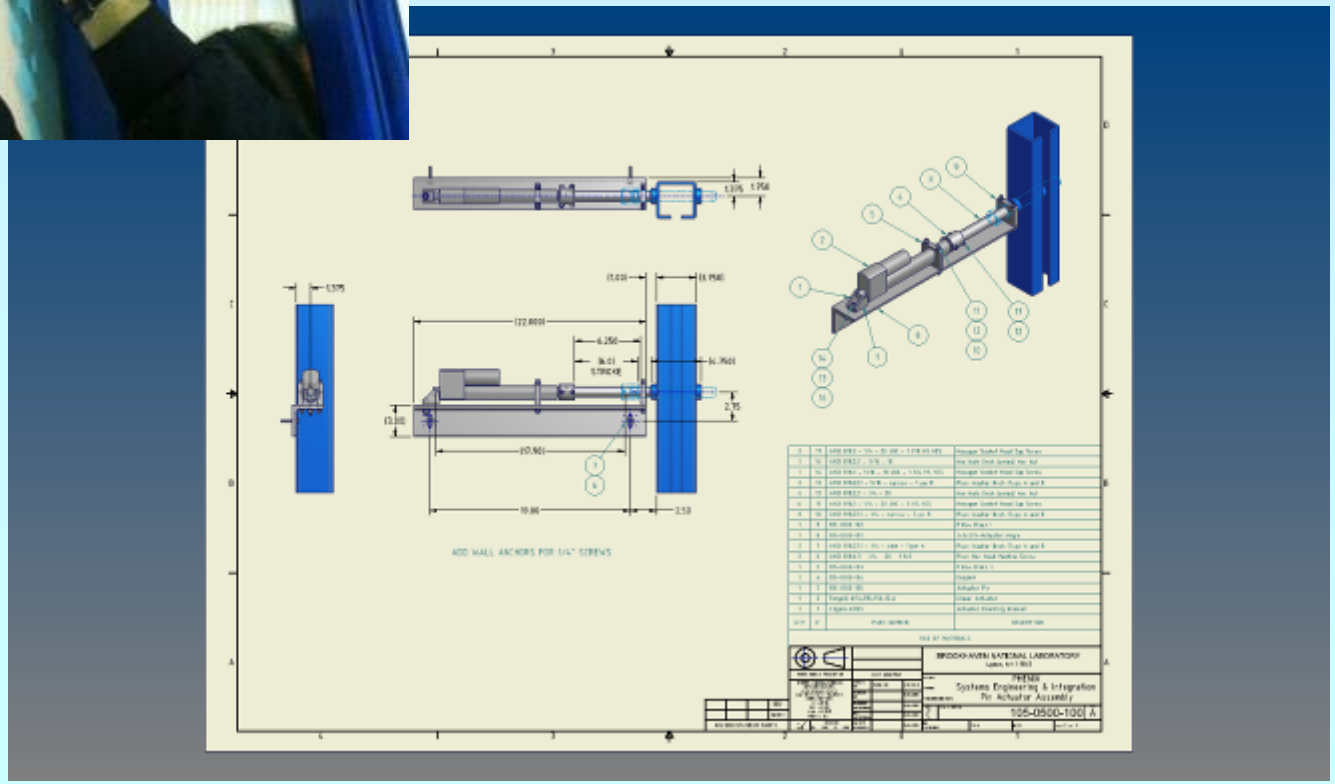
VTX/FVTX Troubleshooting, Repair and Modifications

Window Washer Safety Pins:

Remote insertion/retraction



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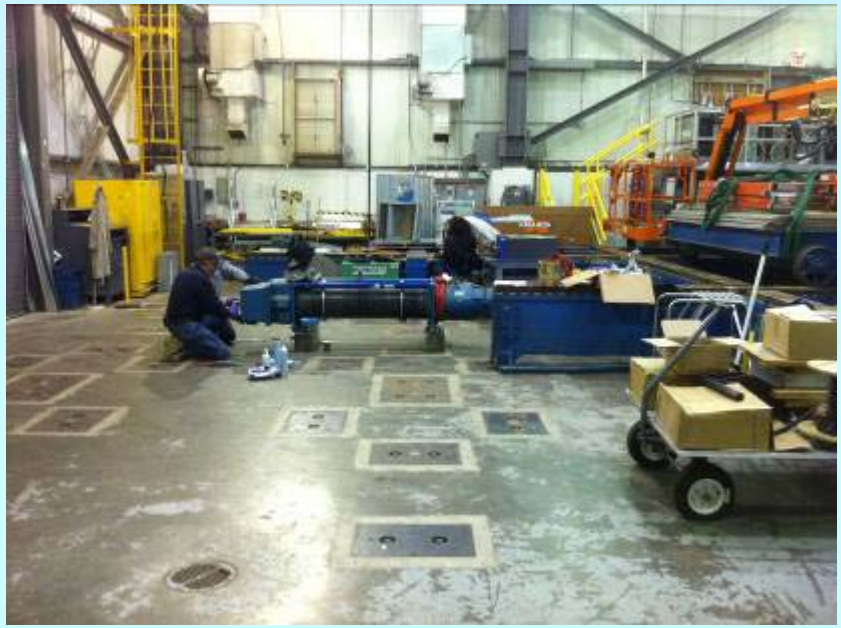
AH Crane variable speed drive
and wireless remote upgrade ??



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Looking Ahead to the 2012 Shutdown
(Continued)

Rough Schedule:

Prep for shutdown	2/1-6/15/2011
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and proceures	
Assembly and QA tests	
Run 12 Ends	6/15/2012
Shutdown Standard Tasks	6/15-7/13/2012
• Open wall, disassemble wall, Remove MuID Collars,	
• Move EC to AH, etc.	
Disassemble VTX/FVTX services	7/2-7/20/2012
Remove VTX/FVTX and transport to Chemistry Lab	7/20/2012
Remove MMS & MMN vertical East lampshades	7/23-7/27/2012
MuTr South Station 1 work	
Install access (Sta. 1work platforms)	7/23-7/27/2012
Disconnect Cables, hoses etc, ID/label all	7/30-8/3/2012
Remove FEE plates and chambers	8/6-8/10/2012
Station 2 Terminators and manifold upgrade through access opened by station 1 removal	8/13/-8/31/2012

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Looking Ahead to the 2012 Shutdown
(Continued)

MuTr South Station 1 work (Cont'd)	
Clean/install new MuTr Sta. 1 chamber parts and upgrades (concurrent At RPC Factory)	8/13/-8/31/2012
Re-install chambers and FEE plates	9/4-9/7/2012
Re-cable, re-hose and test	9/10-9/28/2012
Repair upgrade, test, reinstall VTX/FVTX	7/23-9/17/2012
Station 3 North and South (upper half) re-capacitation and air manifold upgrades	7/23-9/30/2012
Summer Sunday (RHIC)	8/5/12
Substation breaker upgrade/test (CAD)	TBD
AH utility power distribution upgrade	TBD
RPC stations 1 and 3, north and south maintenance	As required
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
pre-run commissioning and prep for run 13	10/1-11/30/2012
Prep for EC roll in	11/5-11/9/2012
Roll in EC	11/12/2012
Prep IR for run	11/12-10/17/2010
Pink/Blue/White sheets	10/17-11/30/201
Start run 13	12/3/2012

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New Electrical Work for 2012 Shutdown, not yet scheduled

1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.
2. Add the Assembly Hall Crane lockout/contactor/ indicator light key switch circuit – similar to IR Crane.
3. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
4. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
5. Work with Martin Purske on new computer rack replacements/additions for upcoming Run 13. He always has last minute Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work.

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Additional Work for 2012 Shutdown, not yet scheduled

1. Replaced aging magnet hoses
2. identify obsolete services passing through sill and remove them.
3. Revisit cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add light & 2 switch controlled outlets below chiller platform in AH
6. Add limit switch and improved spooling control for window washer cable.
7. Add dusk to dawn light by gas mixing house and R134A shed

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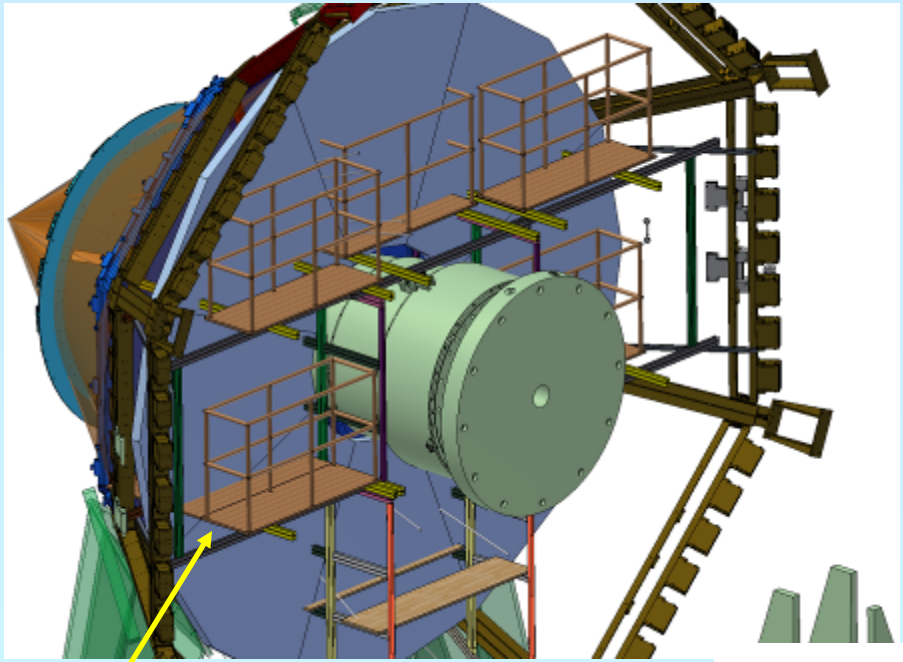
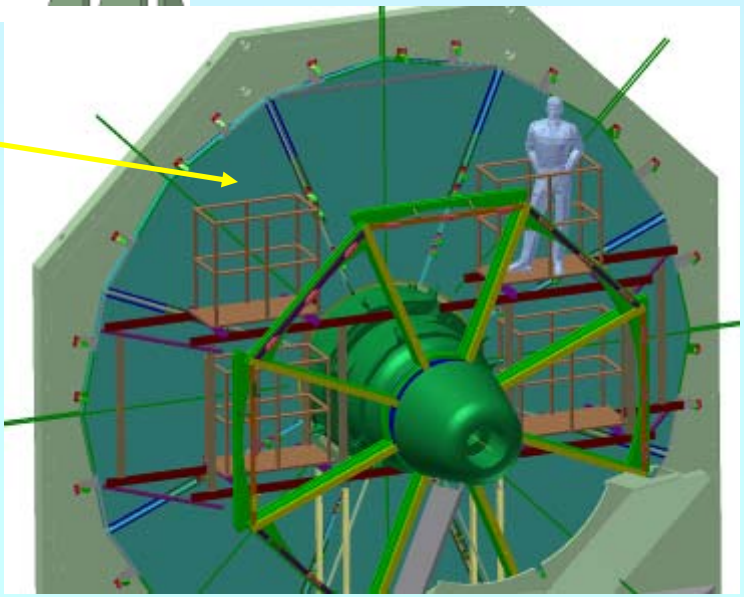


North & South internal work platforms for next summer's shutdown



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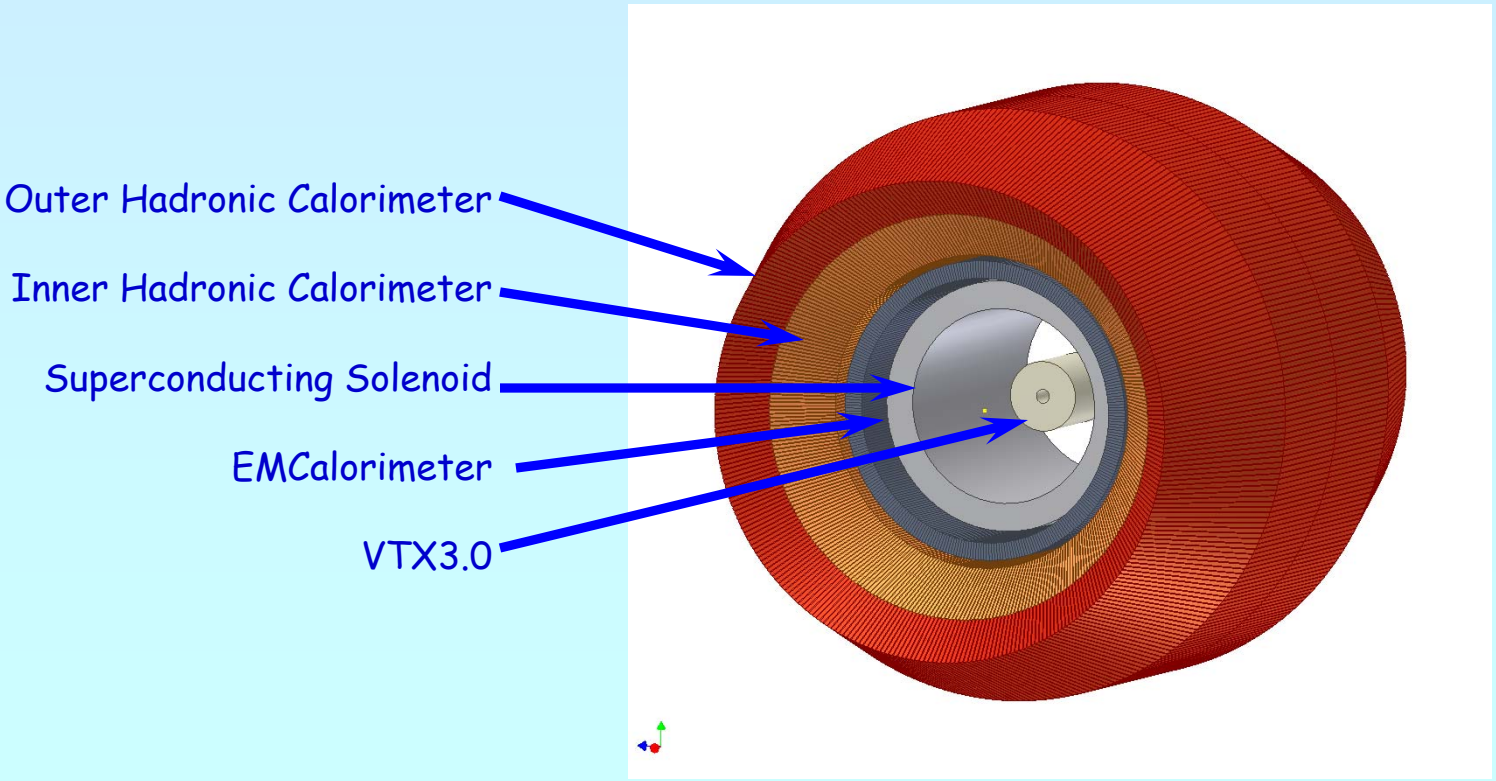
sPHENIX Upgrades

PHENIX engineering and design are providing support for overall structural and spacial design and modeling, cost estimation and prototype design/fabrication



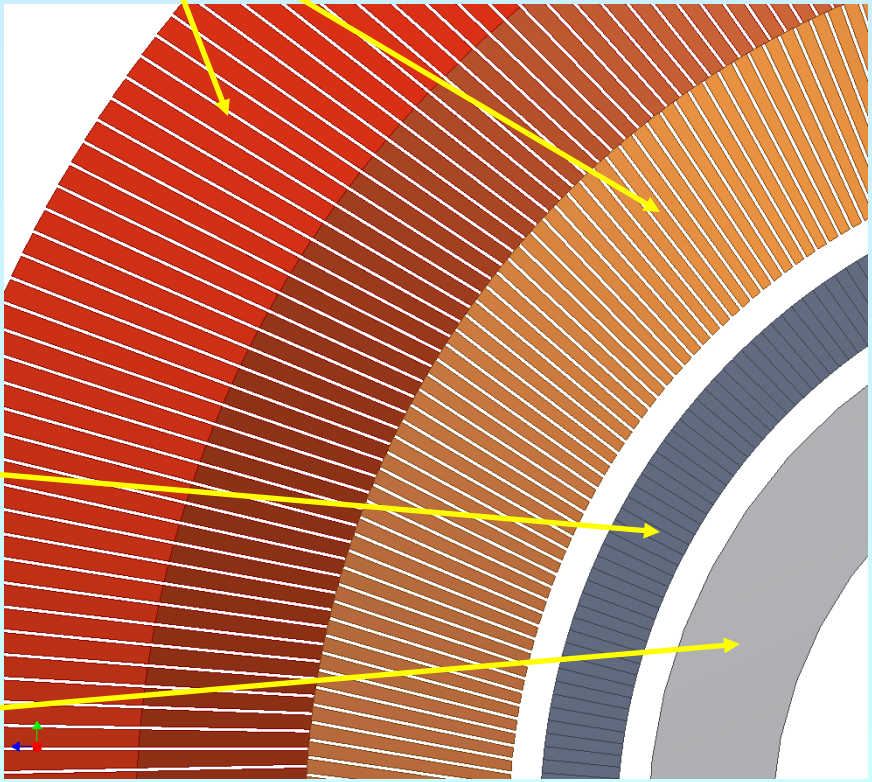
TECHNICAL SUPPORT ZOIZ

Inner and outer Hadronic Calorimeters
320 segments each, steel and scintillator
1 meter total thickness, ~4.5 meters long

VTX 3.0 vertex detector
(upgraded from present VTX)
[not in picture]

ElectroMagnetic Calorimeter
314 segments, Tungsten
and scintillator 0.125 m th
~2 m long

Superconducting solenoid
2 Tesla Magnet and cryostat
.70 m inner radius, .20 m th



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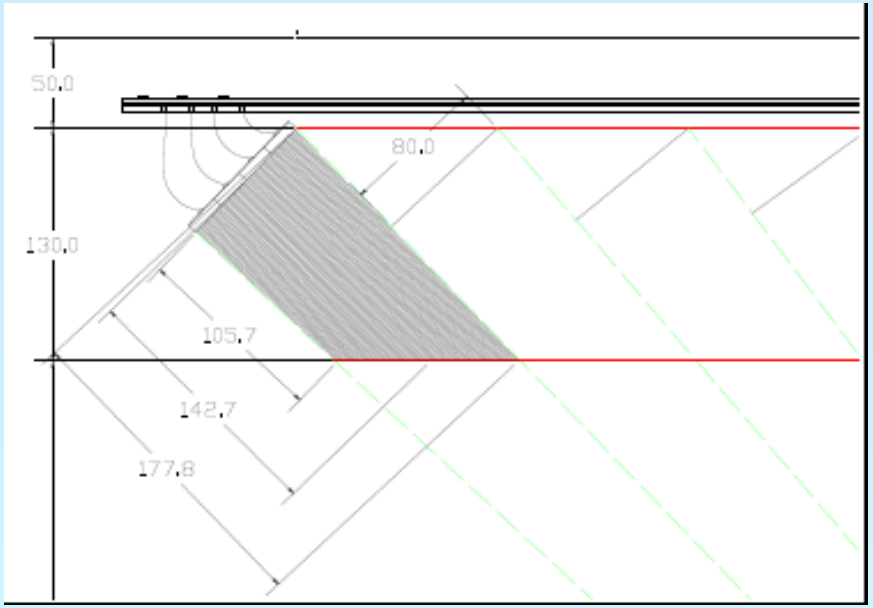

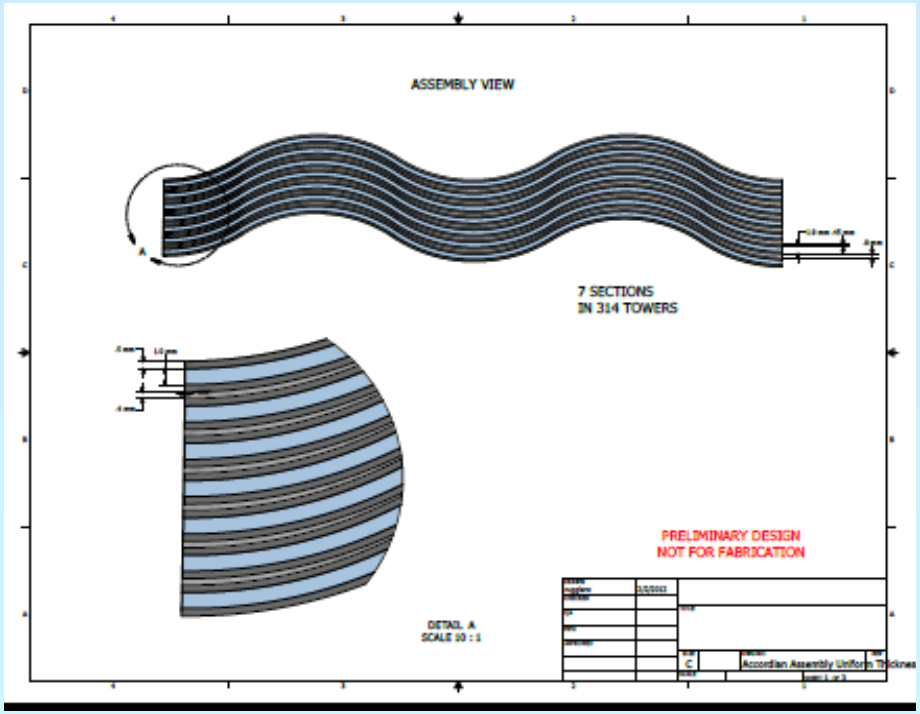

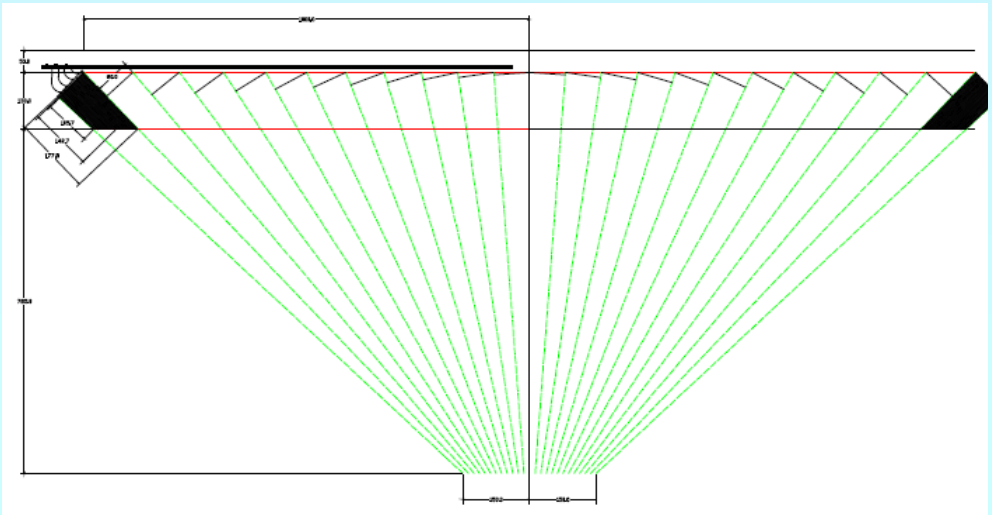

Electromagnetic calorimeter segments using "accordian" shaped scintillators and tungsten plates to optimize detector sampling

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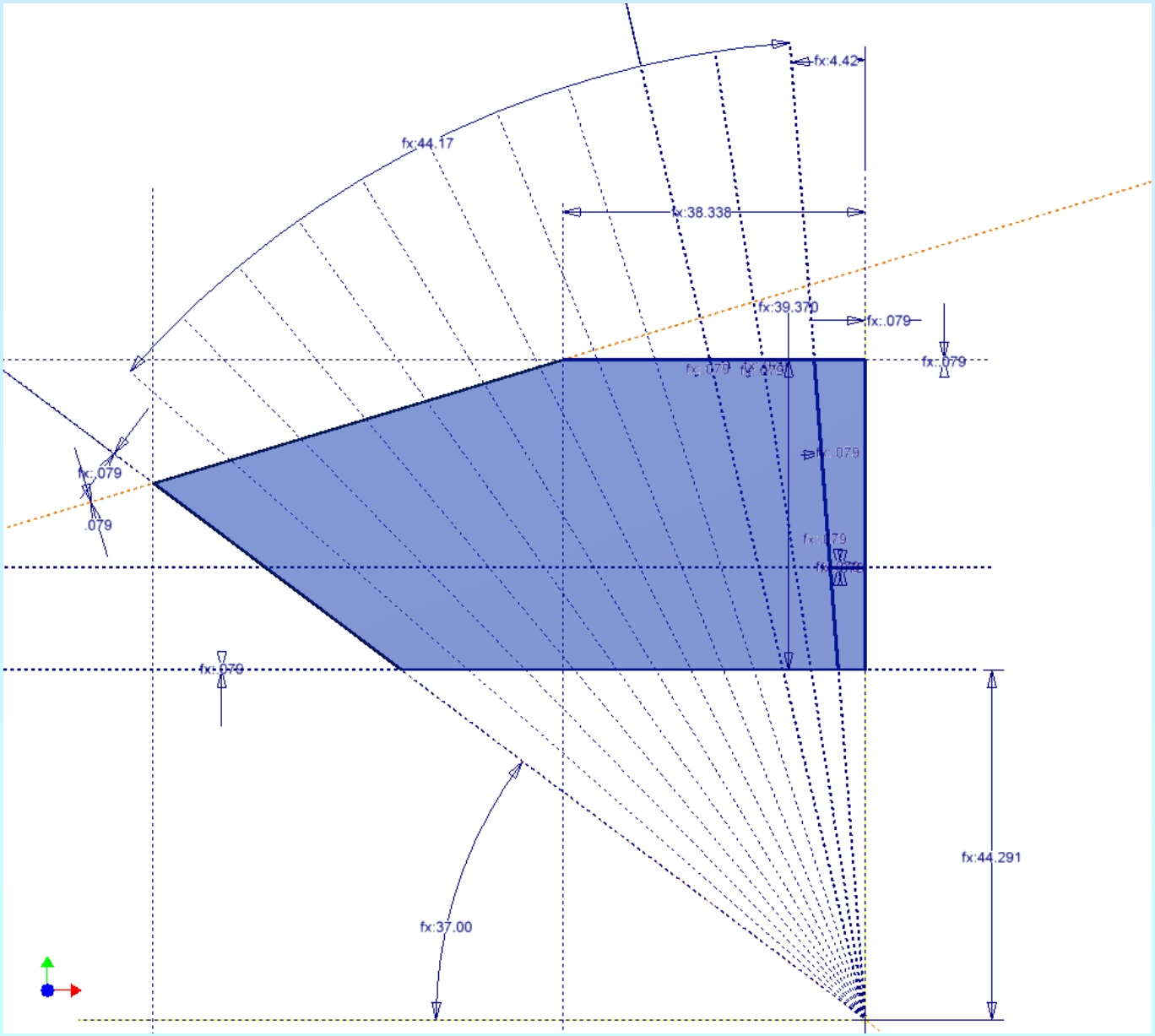

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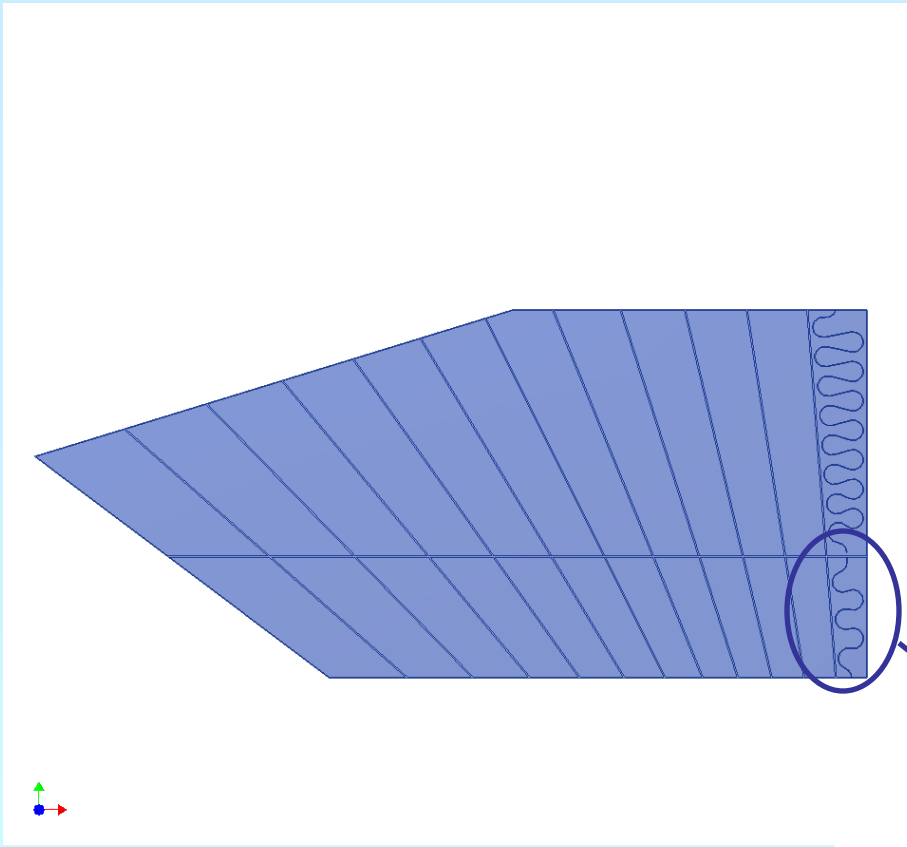
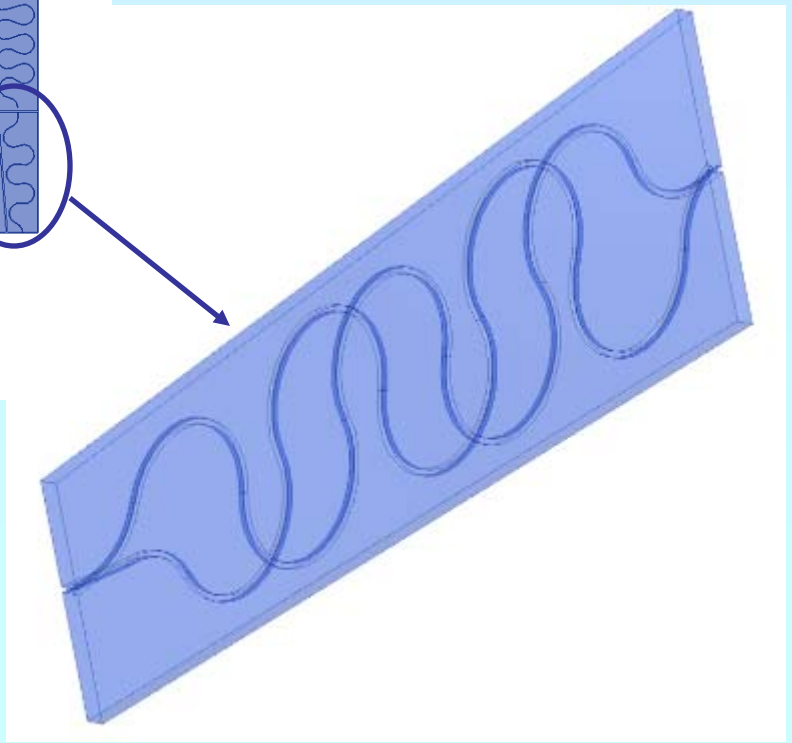


Typical Optic Fiber serpentine pattern on 1 scintillator section Opposing pattern on opposite side



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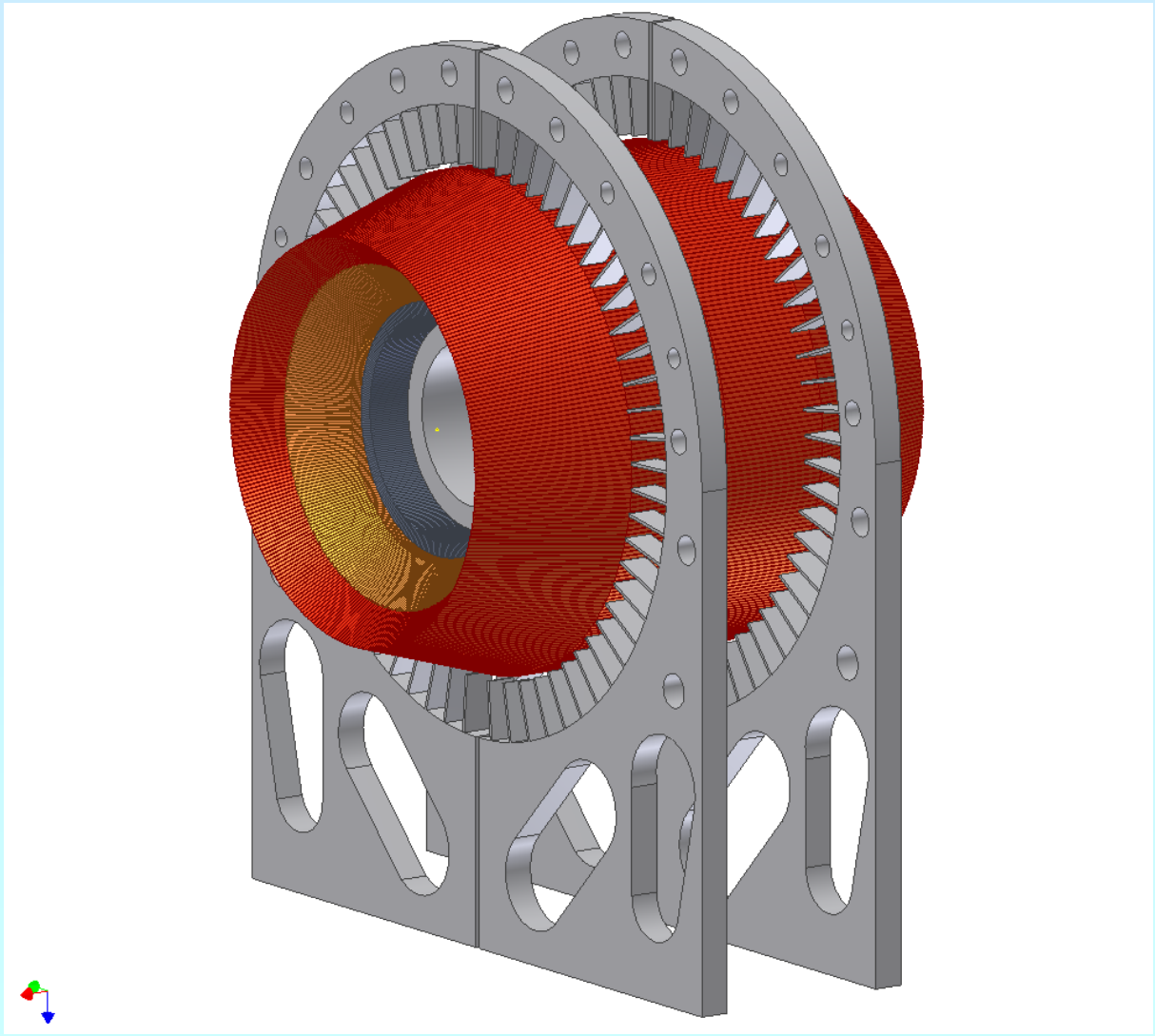

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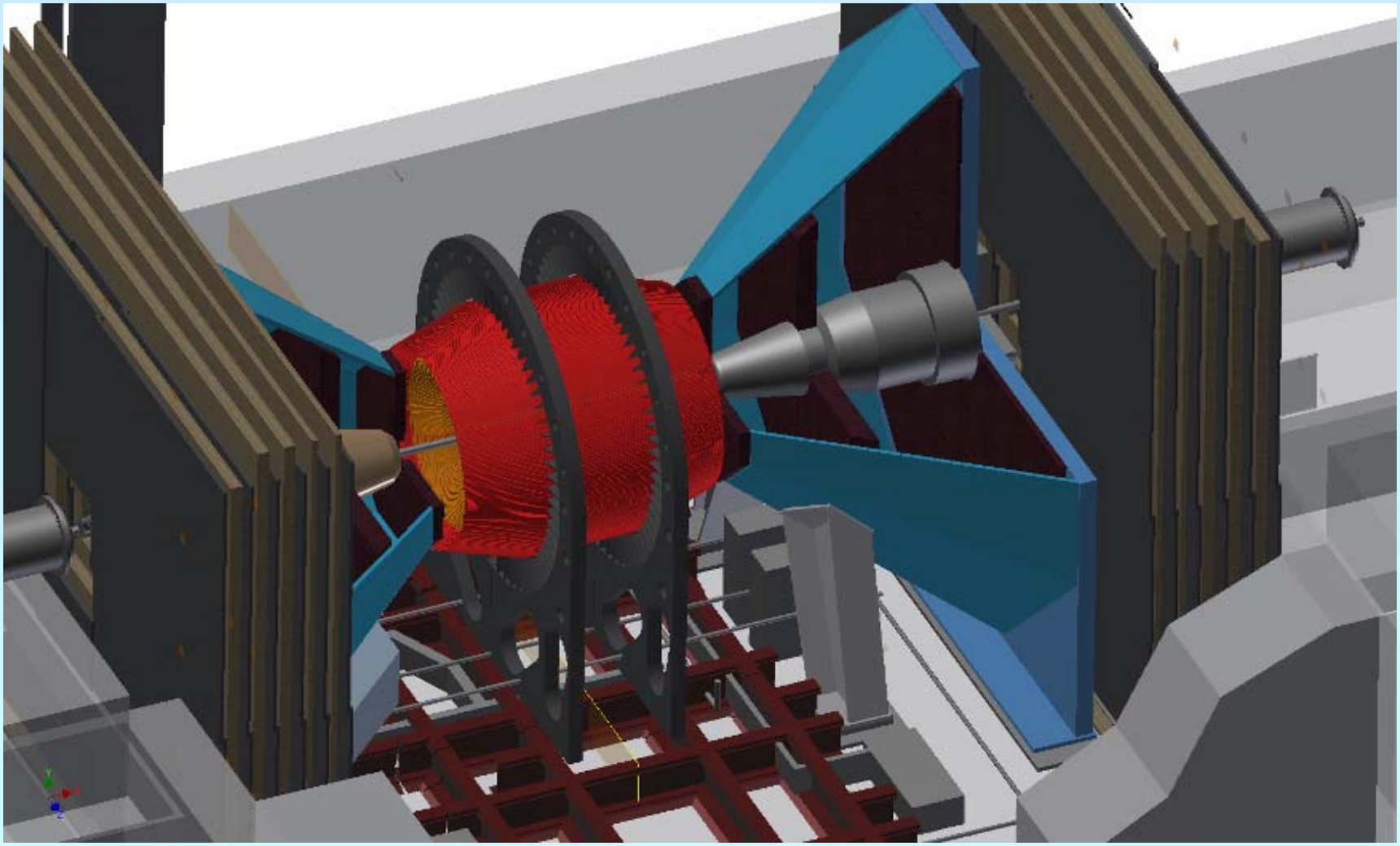
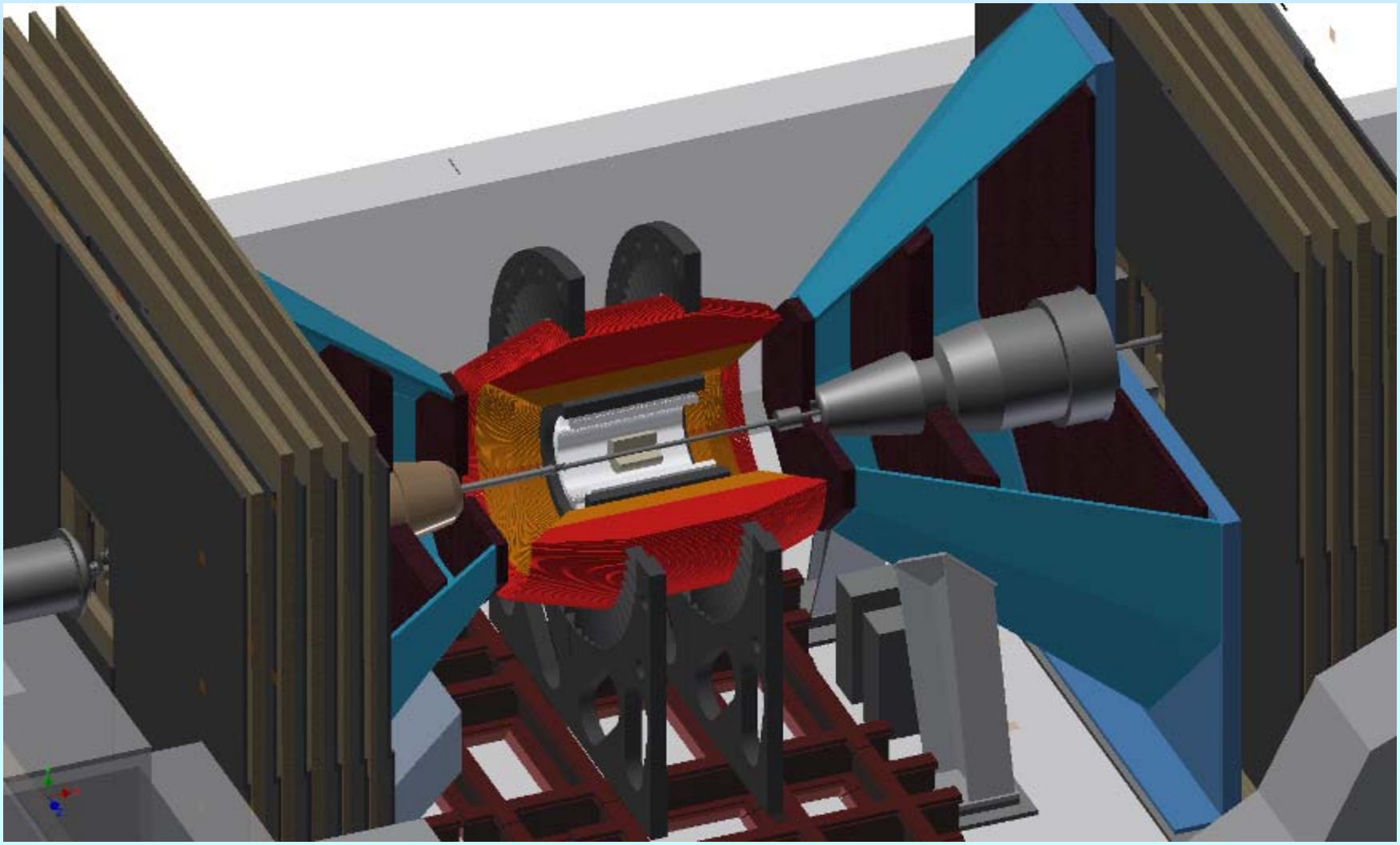


sPHENIX SC magnet, Hcal, EMCal and VTX3.0 in PHENIX IR with MMN, MMS, MuID in place, EC, WC and CM removed. No support structure or services considered yet

TECHNICAL SUPPORT ZOIZ



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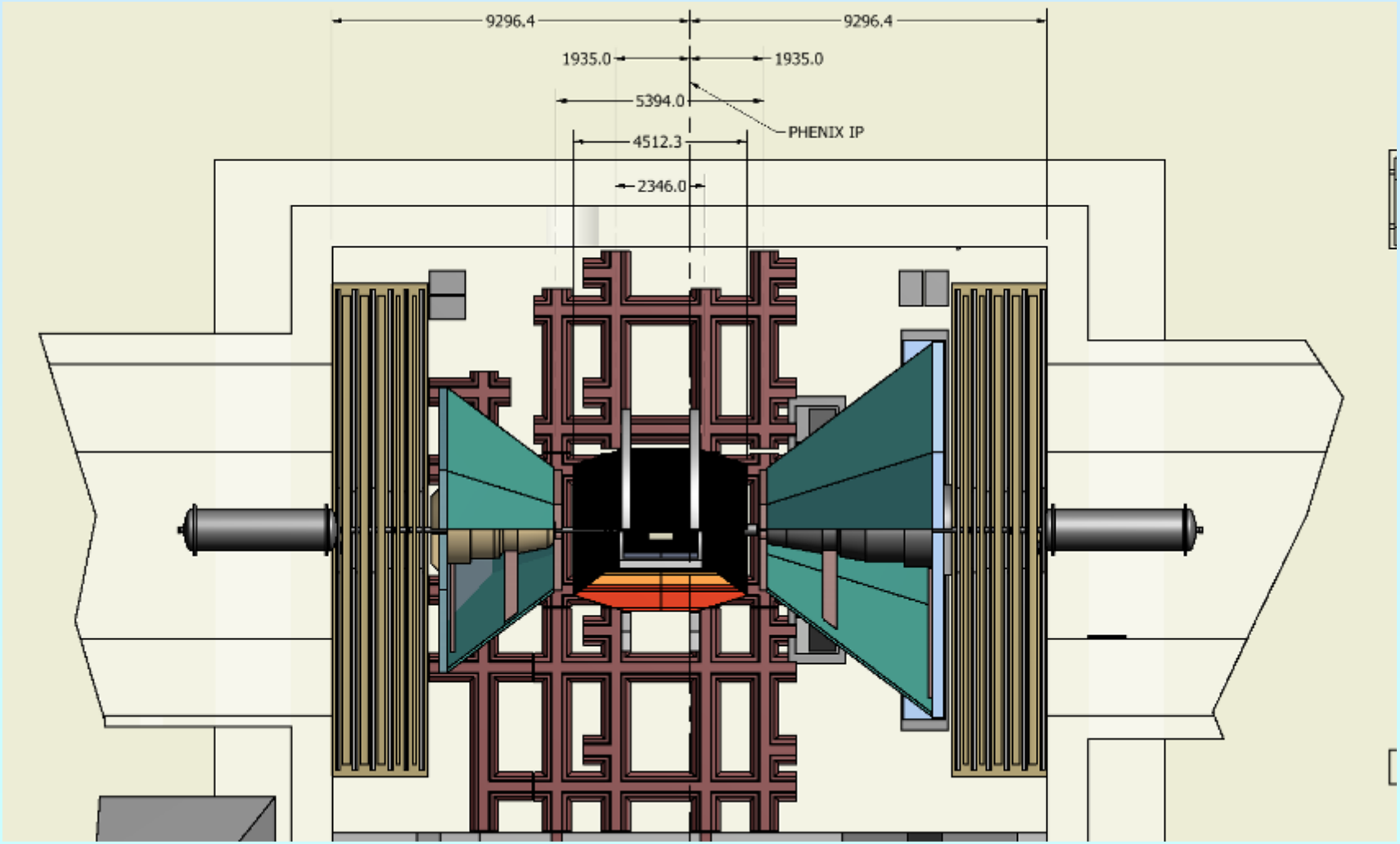

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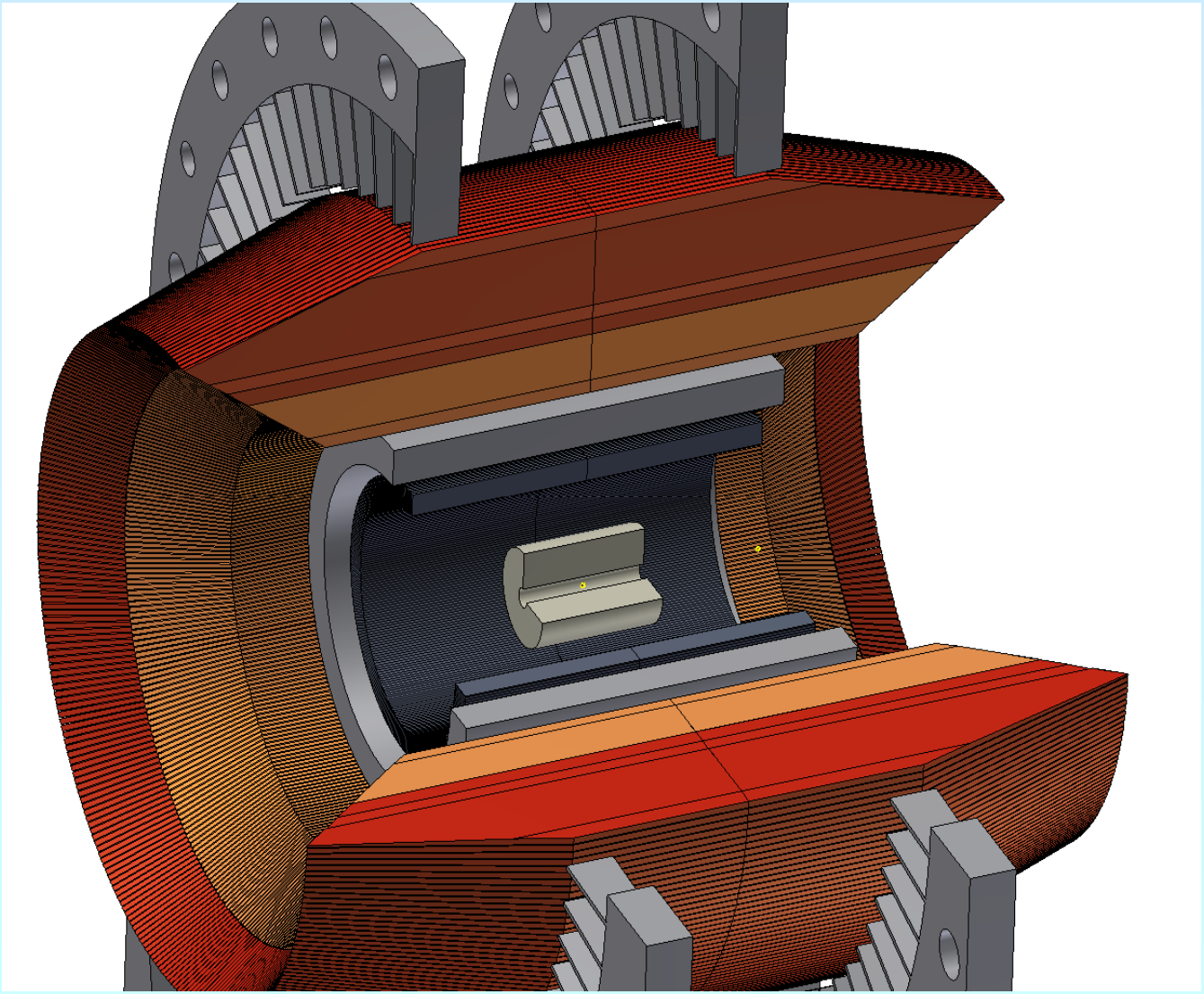

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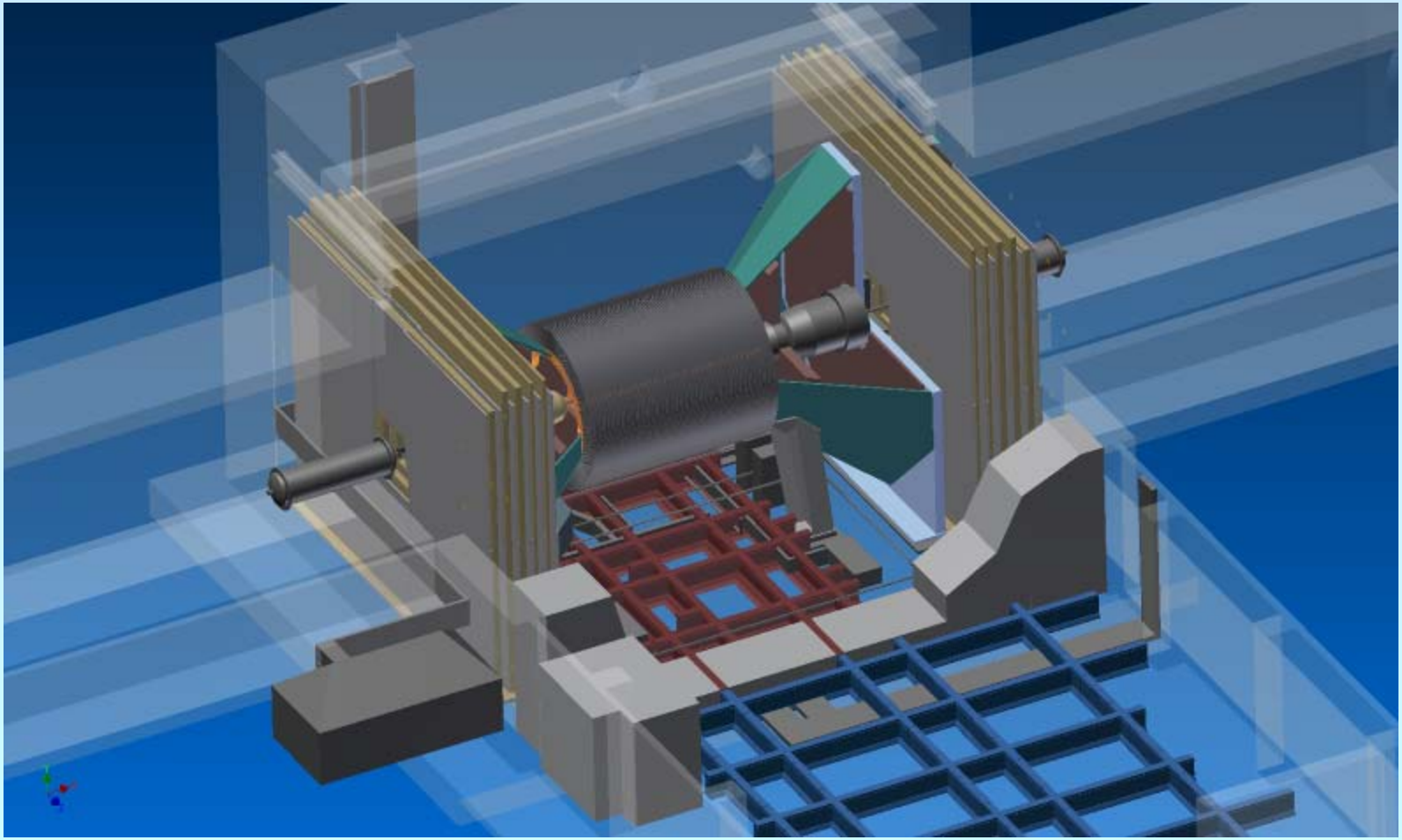


Safety, Security, Etc.

1. Configuration Management – we are reviewing our Config. Management policies and will develop a controlled procedure to assure that we are within Lab guidelines. Using HBMS, CAD and STAR documentation as appropriate. Most important areas are Gas systems, Electrical and safety systems, experimental structures and equipment and Infrastructure.

2. DOE HSS Work Planning review next week

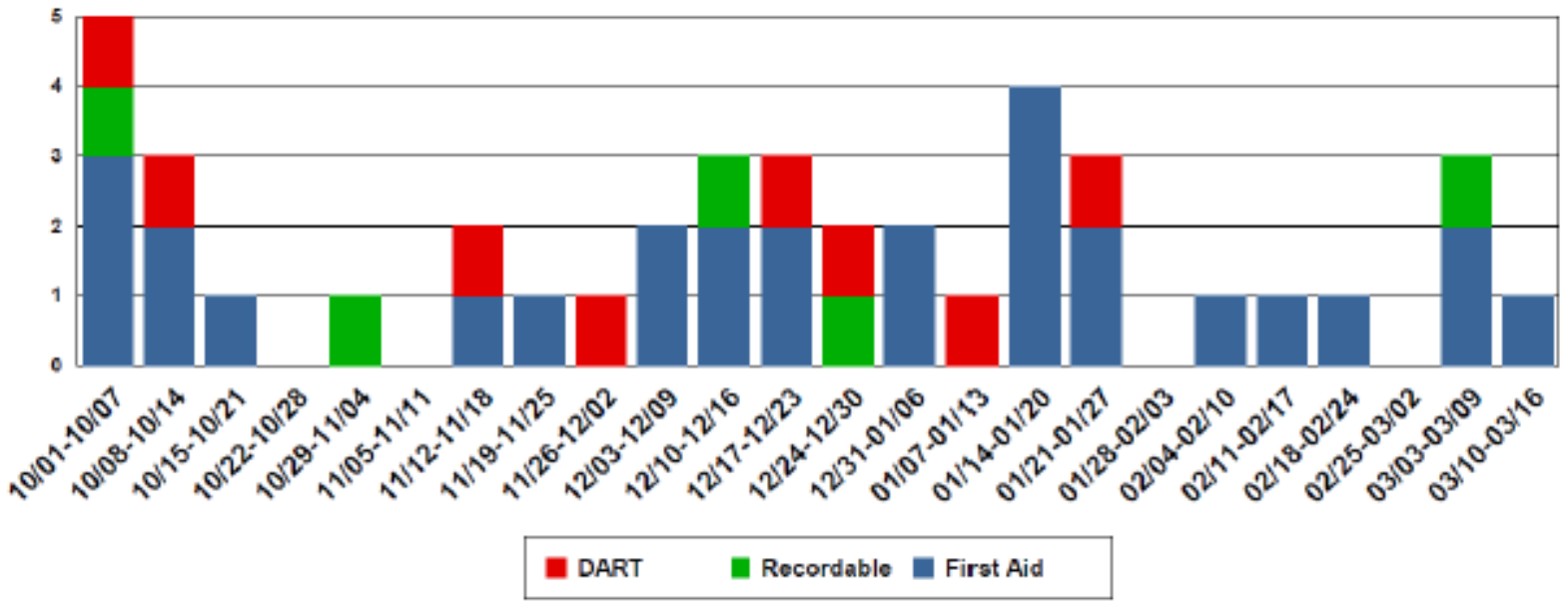
   Interested in reviewing our work planning practices and observing work in progress: will probably stop by on Tuesday and Wednesday:

   Note: we plan work using a risk graded approach

   - informal work planning discussions each morning,
   - shift change scientific work planning each afternoon,
   - general technical support work planning
   - undocumented worker planned work
   - Worker planned work documented (green sheet) work planning (no CAD review)
   - CAD enhanced work planning
   - controlled procedures, both CAD general and PHENIX specific
   - after task work reviews

   We discuss potential hazards and appropriate means for mitigating hazards (alternative non-hazard approaches, engineered safety, administrative safety)

Injuries Per Week (FY)
As of 3/16/2012



Injury Status:

FY12 YTD: DART – 8, TRC – 13, First Aid – 28
FY11: DART – 27, TRC – 42, First Aid – 45
FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx

Recent Injuries		
3/15/12	First Aid	An employee was reaching to remove an object from a shelf and fell. At the OMC, first aid was given.
3/9/12	First Aid	An employee struck his head against ductwork as he tried to duck under it. At the OMC, he received first aid.
3/5/12	DOE Recordable	An employee was injured when using a bungee cord to secure a package for transport from one location to another. At the ER, he received sutures, making this a recordable injury.

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Recent Events		
3/14/12	SC-BNL	At about 3pm on 3/14/12, a C-AD employee was removing cables when the sprinkler head was hit and broken. Water started to flow from the sprinkler pipe, and the employee called Fire/Rescue to report the incident. Fire/Rescue and the Fire Protection Engineer responded and noted that there was no local building alarm, or alarm at the fire department headquarters. There were still working fire/smoke alarms in the area. This sprinkler system was installed long ago for equipment protection only. There was no curtailment of operations or building evacuation. (Event Link)
3/14/12	Non-Reportable	During a demonstration of small quantities of controlled explosive material, a small grass fire ignited. As part of the safety plan, Fire/Rescue was standing by and the fire was contained within 10 minutes. (Event Link)
3/14/12	Non-Reportable	Custodians were cleaning an unoccupied apartment (2B) when they heard a pop and saw smoke coming from the kitchen. Fire/Rescue was called and it was determined to be a short in the electrical heater in the kitchen. There was no fire. (Event Link)
3/12/12	Non-Reportable	At approximately 10:00 am on 3/12/12, electricians walking by a motor control center noticed a burning smell. Upon investigation they realized that two fuses were overheated. They shut down the equipment at 1:00 pm to replace the fuses. When the second fuse was removed, the fuse clip detached, necessitating replacement of the bus bar bucket. Substation #2 has to be shut down for the repair, necessitating shut down of the UV experimental program, some equipment subsystems, and electricity to some lab rooms. The shutdown lasted about 2 hours. (Event Link)
3/7/12	Non-Reportable	On 3/7/12, Fire/Rescue responded to a report of a burning odor at Bldg. 701. A light ballast had failed; electricians removed the ballast. There was no fire and no evacuation was necessary. (Event Link)

Where To Find PHENIX Engineering Info

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm